A COMPARISON OF FARM INPUT PRICES IN ONTARIO AND THE UNITED STATES 1990

Ministry of Agriculture and Food
Legislative Buildings
Toronto, Ontario
M7A 1B6

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Policy Analysis Branch
Ontario Ministry of Agriculture and Food
Legislative Buildings, Queen's Park
Toronto, Ontario
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EXECUTIVE SUMMARY

There is concern that Ontario farmers face a considerable competitive disadvantage because U.S. producers have access to the same inputs at significantly lower prices than Ontario producers. This study attempts to establish where price differences exist and to comment on the causes of any significant differences.

Ontario prices for a number of farm inputs were compared to the prices in states and regions of the U.S. that are close to Ontario. Data from April/May 1990 were compared when available. When 1990 information was not available, 1989 or 1988 data were used. Caution should be used when directly comparing the prices obtained. Precise prices paid for inputs are difficult to establish because they are purchased in a variety of forms, volumes and conditions of sale. Also, in this study, prices were collected from sources which used different methodologies.

The results of the study suggest that some, but not all, inputs are more expensive in Ontario. Ontario farmers were at a disadvantage when purchasing pesticides, fuel, and land. In 1989, interest rates paid were significantly higher. The prices of some seed and, at times, the price of some manufactured feed were higher. A variety of factors contribute to these price differences, including the unrefunded portion of federal fuel tax and a variety of regulations that result in the Canadian market for products such as pesticides being isolated from the markets in other regions.

There was no one price for any product. Substantial price variations exist within Ontario, between U.S. states and regions, and within each U.S. state. A number of factors contribute to these variations. The differences within a region are often greater than the differences in the average price between regions.

In addition to price, other factors were found to have a significant impact on competitiveness. The form of the input used, the combination of inputs used, and the level of inputs used can have a greater impact on the cost structure of a farm business, based on the analysis from this study, than the relative regional price level of a particular input. The result is wide variations in the cost structure between farms within the same jurisdiction and same commodity. This suggests that significant opportunities exist for cost reductions through adjustments in purchasing practices and input use levels, and through the substitution of some inputs for others.

Information on prices collected does not support the argument that inputs are universally more expensive in Ontario than in the U.S. The comparisons made in the study suggest that some inputs are equally or lower priced in Ontario, while some are more expensive. For other inputs, the evidence was inconclusive.

INTRODUCTION

Many farm organizations are concerned that Ontario farmers might be at a competitive disadvantage because U.S. producers have access to the same inputs at significantly lower prices. As a result of this concern, this study was undertaken to:

- establish areas where price differences exist, and
- identify the causes of any significant price differences.

The inputs studied were fertilizer, fuel, pesticides, seeds, feed, farm machinery, custom work rates, land prices and rental rates, interest rates, labour, and farm taxes. Ontario prices were compared to those in several states that compete with Ontario because of their location and/or the agricultural products they produce. Prices for April/May 1990 were used when available. The study was conducted during the spring and summer of 1990.

The states selected for inclusion in the study in the north central U.S. were the Great Lakes states of Michigan, Minnesota, Wisconsin and the Corn Belt states of Ohio, Illinois, and Indiana. The northeastern state studied was New York. North Carolina was also included because its fruit competes with Ontario fruit.

The study's findings have some limitations. Firstly, precise prices paid for inputs are difficult to establish for many reasons including:

- prices for many goods fluctuate over time and within a market,
- the value of the Canadian dollar affects the cost of imported inputs,
- volume discounts are common,
- retailers use a variety of special terms and arrangements to attract farm business,
- the price charged for one input may be affected by other business conducted between the retailer and the purchaser or by the services provided,
- the availability of certain products can vary between regions,
- the level of local competition affects both the price and the terms of sale for a particular input,
- considerable product differentiation exists for some inputs - e.g., seed varieties, machinery models and options, etc.
- prices are not publicly quoted for many inputs, and
- when prices are quoted, details on volume, terms of sale, etc. are not always specified.

Secondly, farm operators on both sides of the border purchase inputs in various forms, in different volumes, and under many different terms of sale. Farmers use various combinations of inputs to produce the same crop. Significant differences in farming practices and input costs often exist both between and within regions. In addition, yield differences that exist between regions have a significant effect on the per unit cost of output.

Finally, caution should be used when comparing and drawing conclusions from two price series that were collected with different methodologies, as was the case in this study. In addition, the comparison represents the situation at one point in time. The situation might be different at other times of the year or in subsequent years.

Readers should be aware that factors other than the price of inputs affect the total acreage costs of production. These factors include seeding rates, substitutability of inputs, and other management practices. Some of these factors are highlighted where appropriate.

METHODOLOGY

Sources of Data

Individuals in both countries were consulted to gather information about particular input industries and common farming practices. In addition, statistical information was gathered from many sources as outlined below.

Ontario Data

Prices for fertilizer, pesticides, diesel fuel, and seeds were collected from co-operating retailers across Ontario in the spring of 1990 by the Policy Analysis Branch[1]. Custom rate information and land rental rates were obtained from Policy Analysis Branch publications. List prices for farm machinery were obtained from companies operating in Ontario. Manufactured feed prices were obtained from feed retailers. Land values were obtained from a yet unpublished Policy Analysis Branch study and from Statistics Canada. Information on the farm property and fuel taxes was collected through discussions with Canadian officials and from various publications.

U.S. Data

The National Agricultural Statistics Service (NASS), a branch of the U.S. Department of Agriculture (USDA), was the main source of data on the input prices paid by U.S. farmers. NASS collects commercial price information and publishes it quarterly on either a regional or a national basis. When available, price information from state economists was used to supplement the NASS data.

Input Cost Data

Fertilizer

The prices for bulk purchases of the main fertilizer components were collected. Representative prices for two regions in Ontario were compared with those from two regions in the U.S. and also with the average price in the U.S. The price per kg of actual nitrogen was compared for the various sources of nitrogen. The proportion of total nitrogen supplied from various nitrogen sources in the individual states was compared to the sources used in Ontario.

As fertilizer costs can be altered by substituting different types of fertilizer to get similar nutrient levels, the total fertilizer expenditure in Ontario was compared to that in some states using similar ratios of nitrogen, phosphorous, and potash. From this information, the average price paid per tonne of nutrient was calculated and compared between regions.

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[1] The data was collected in 1990. Comparisons drawn from this data may not reflect conditions in 1991 or subsequent years.

Pesticides

Prices published by NASS on a national basis for commonly used pesticides (herbicides, insecticides, fungicides and some other chemicals), were compared to prices collected in Ontario. U.S prices, from state and private sources, were also examined where NASS prices were not available. Container sizes commonly used were considered. To adjust for differences in formulation, prices were converted to a per kg of active ingredient basis. The variation in prices within Ontario was calculated.

Fuel

Bulk delivered diesel fuel prices were collected for several locations in Ontario and adjusted to account for farm fuel tax rebates. Ontario prices were compared to the relevant U.S. regions and to the average U.S. price.

Feed

Feed prices in various regions of the U.S. were compared. Trade statistics for feed moving into and out of Ontario were examined. Some Ontario feed manufacturers were questioned in order to establish their ability to compete with neighbouring American suppliers. The price of corn and soybean meal in Ontario was compared to the price in several U.S. locations.

Seed

Price ranges of several seeds commonly used in Ontario were calculated and compared to the U.S. national prices. Attempts were made to obtain levels of use for both pedigreed and common seed. The per-acre cost of seed for corn and soybeans was compared to the cost found in several U.S. states. The impact of different seeding rates for corn and soybeans was analyzed. Other factors that can significantly affect the per acre cost of seed were identified.

Machinery

The list price in Ontario for several types of farm machinery was collected and the variation was examined. These were compared to the list prices and average prices paid in the U.S. for similar types of machinery. No comparable average price paid data was available for Ontario.

Custom Work Rates

Custom farm work charges for many operations commonly available through custom operators were compared.

Land

Ontario land rental rates were compared to rates charged in neighbouring states. Information on the crop grown and the yield that would be expected in each region was examined and comparisons were made for similar regions. The variability of the rental rates was examined. Land sale values were also compared.

Interest Rates

The prime interest rates in Canada and the U.S. were compared for early 1990 and for the previous several years. The average interest rates paid in 1988 and 1989, for mortgage and non-mortgage loans were compared between Ontario and the neighbouring states. The source of debt capital was identified for the different jurisdictions.

Labour

The U.S. wage rates determined by NASS were compared to the Foreign Agriculture Resource Management Services (FARM) rates for offshore labour for Ontario because a representative price series for locally sourced labour in Ontario was not available. The rates for full-time employees, found in a 1988 study on 121 Ontario hog farms, were compared to the rates found in another 1988 study of New York dairy farms. Finally, the variance in wages assumed within some regions was established by examining crop budgets for horticultural crops produced in different parts of Michigan.

Taxes

Ontario sales, fuel, and property tax policies which apply to agriculture were compared to those in Iowa, Michigan, Minnesota, New York, North Carolina, and Ohio.

Attempts were made to standardize the information from different sources to make it more comparable. These adjustments are necessary because discounts may be received for many reasons including volume purchases and time of purchase or payment. When price information was collected from a primary source, attempts were made to obtain the price that would be paid for a purchase close to when it would be used with payment made upon receipt. Where possible, U.S. prices which were collected in mid-April were adjusted to be comparable to the Ontario data which was collected in late April and May. The number of adjustments needed for some types of inputs may make small price differences between regions insignificant.

U.S. prices for 1989 and 1990 were converted to Canadian dollars using an exchange rate of $1.18 Canadian to $1.00 U.S. The rate used for 1988 was 1.23 to 1. Data from other years was converted using the appropriate exchange rate for that year. All prices are in Canadian dollars unless otherwise stated.

RESULTS

Fertilizer

Table 1 shows that the price of ammonium nitrate and muriate of potash was significantly lower in southwestern Ontario than in the north central U.S. The differences in prices of the other main components were within 4 per cent, with some lower in the U.S. and others lower in Ontario.

FERTILIZER PRICE COMPARISON AT FARMGATE - SPRING 1990
SOUTH WEST ONTARIO VERSUS NORTH CENTRAL UNITED STATES

Table 1

Fertilizer	North Central United States ($CDN./tonne)	Southwest* Ontario ($CDN./tonne)	Canadian Advantage (as a % of CDN. Costs)
0-0-60 Muriate of Potash	200.31	178.23	12.39%
0-46-0 TSP	252.34	245.39	2.83%
11-52-0 MAP	295.26	293.31	0.66%
18-46-0 DAP	286.16	287.47	-.46%
28-0-0 UAN	157.39	150.92	4.29%
34-0-0 Ammonia Nitrate	225.02	204.50	9.79%
46-0-0 UREA	234.13	239.45	-2.22%
82-0-0 Anhydrous Ammonia	261.44	271.97	-3.87%

Source: Agricultural Prices, NASS, April 1990; Policy Analysis Branch Survey.
North Central U.S.: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin

*Southwest Ontario: all areas west of Metro Toronto

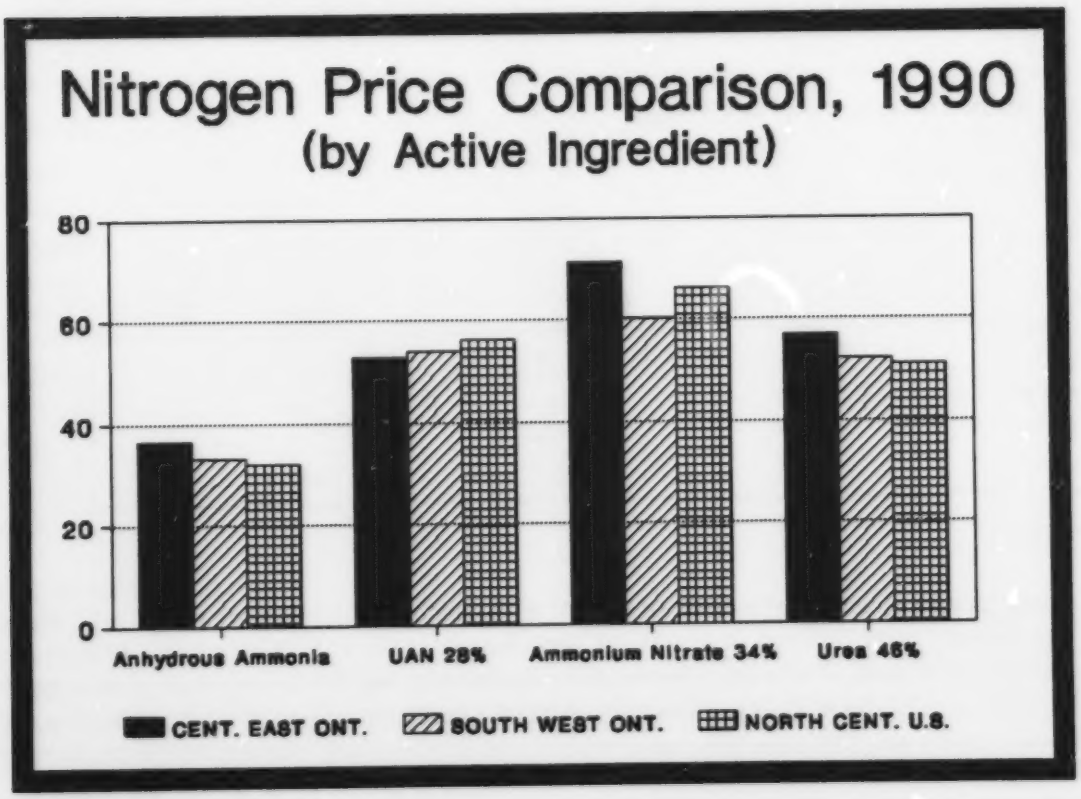
Prices differed within Ontario. The prices for most fertilizer components were lower in the south and southwest regions than those in the central and eastern regions. Prices also varied within regions.

In the U.S., fertilizer prices varied significantly between regions. The price per tonne for 44-46% superphosphate varied between $252 in the north central region to $345 in the southwest region with an average U.S. price, as quoted by the USDA, of $261. The simple average of the prices collected in southwestern Ontario was $245.

The cost per kg of nitrogen was compared for a variety of nitrogen sources. Anhydrous ammonia was the cheapest source by a significant amount in all regions (Figure 1). In all states examined, except New York, a significantly higher proportion of the nitrogen used came from anhydrous than was the case in Ontario (Table 2). Ontario used a higher proportion of urea and ammonium nitrate. For the majority of states, multiple nutrient applications of nitrogen were insignificant.

COMPARISON OF NITROGEN COSTS FOR A VARIETY OF SOURCES

Figure 1



ANHYDROUS AS PER CENT OF TOTAL NITROGEN USED **Table 2**

Location	Per cent Used
Illinois	55.6
Indiana	37.4
Iowa	61.9
Michigan	30.2
Minnesota	54.7
New York	7.4
Ohio	27.7
Wisconsin	29.0
Ontario	13.6

Source: Fertilizer Use and Price Statistics, USDA; Fertilizer Institute of Canada

Table 3 shows that the average fertilizer expenditures per tonne of active ingredient were considerably higher in Ontario for 1988 than in three states (Michigan, Ohio and Indiana) that used similar proportions of nitrogen (N), phosphorous (P), and potassium (K).

COST PER NUTRIENT TONNE 1988 **Table 3**

Location	Total Tonnes Purchased (in 000's)	Total Expenditure ($CDN. Million)	Average Price ($CDN./tonne)
Indiana	948	413.9	436.6
Michigan	527	228.5	433.6
Ohio	756	320.4	424.0
Ontario	532	303.8	571.1

Pesticides

The prices, per kg of active ingredient, of several of the major herbicides were compared (Table 4). The majority were between 10 and 12 per cent cheaper in the U.S. One product (Atrazine) was cheaper in Ontario. The price differences for insecticides and fungicides were, on average, much greater in Ontario with one insecticide (Ambush) being more than twice as expensive.

Regional price differences were apparent within Ontario. Almost all products had a higher average price in eastern and central Ontario than in the southwest. Price differences were also apparent between suppliers in the same region.

In both Ontario and the U.S., an individual supplier's price per unit often varied with the size of container and the total volume purchased. However, variations in price per unit of active ingredient were not greatly affected by the formulation. In some cases, the difference between wholesalers and retailers becomes blurred. Some large retailers will sell to farmer dealers for resale at a very competitive price and commercial relationships between the two firms outside of the chemical business may affect the price.

There was evidence that significant price differences exist within the U.S. market. A private price-reporting firm quoted prices that varied between locations. The expected prices gathered by university researchers were often at least 10 per cent above or below the USDA published prices.

PESTICIDE PRICE COMPARISONS PER ACTIVE INGREDIENT **Table 4**

Chemical	United States ($CDN./kg)	Ontario ($CDN./kg)	Canadian Advantage (As a % of CDN. Costs)
HERBICIDES			
2-4-D Amine	7.04	8.02	-12.22%
Atrazine	7.61	6.54	16.36%
Bladex	14.11	16.92	- 16.61%
Dual	18.05	20.21	-10.69%
Lexone	77.35	80.12	-3.46%
MCPA	8.40	9.52	- 11.76%
Treflan	17.43	19.82	- 12.06%
INSECTICIDES			
Ambush	130.07	301.64	- 56.88%
Counter	27.40	25.27	8.43%
Dyfonate	24.06	25.45	- 5.46%
Furadan	25.49	48.96	- 47.94%
Malathion	9.65	11.80	- 18.22%
Sevin	11.35	16.02	- 29.15%
Thimet	18.86	22.00	- 14.27%
FUNGICIDE			
Captan	10.46	13.86	- 24.53%
Maneb	7.22	8.21	- 12.06%

Source: Agricultural Prices, NASS, April 1990; Policy Analysis Branch Survey

Fuel

The price of bulk diesel fuel delivered to the farm, adjusted to account for tax rebates, was approximately 7 cents per litre higher in Ontario than in the U.S. (Table 5). The price in the Corn Belt was very close to the U.S. average. The price in the northeast region was about 4 cents per litre higher than the U.S. average and about 3 cents per litre lower than Ontario. The price in the Great Lakes states was 6 cents below the Ontario price. Large price differences within Ontario were not apparent. The difference in fuel prices between Ontario and the U.S. was significantly less than the price difference commonly reported at retail pumps due to the absence of tax on farm fuel.

FUEL PRICES - ONTARIO AVERAGE VERSUS UNITED STATES **Table 5**

Location	Price Per Litre ($CDN.)
Great Lakes states	.262
Corn Belt	.255
Northeast U.S.	.293
U.S. Average	.252
Ontario	.322

Source: Agricultural Prices, NASS, April 1990; Policy Analysis Branch Survey

Feed

Table 6a shows that soymeal in Toronto was priced somewhat above soymeal in the Corn Belt. The variability in corn prices over time (Table 6b) was attributed largely to the effect on Ontario corn prices of the Canadian countervailing duty on imports of U.S. corn.

The prices of manufactured feed varied considerably with the region and the type of product (Table 6c). Feed supplement prices were lower in Ontario than in neighbouring U.S. regions. Complete feeds were priced higher in Ontario than in at least some U.S. regions. In the U.S., manufactured feed prices varied by as much as 30 per cent among regions. The U.S. average price for several products was significantly above the price in the cheapest region.

The average prices for manufactured feed should be interpreted with caution. Suppliers quote different prices for similar feeds, containing some different ingredients, which may show different production responses. One example would be a dairy ration with and without urea as a protein source. In addition, all suppliers have different prices for different sizes of sale.

FEED PRICES **Table 6**

a) SOYMEAL 48% ($CDN./TONNE)

Date	Decatur	Sioux City	Toronto
July/90	216.64	214.09	256.39
April/90	215.00	203.85	242.62
January/90	226.83	211.54	247.95
October/89	259.91	n/a	281.37
July/89	315.91	n/a	342.05
April/89	317.31	n/a	331.27
January/89	348.26	n/a	368.94

b) CORN - TRACK PRICE ($CDN./TONNE)

Date	Illinois	Toledo	Minneapolis	Chatham
July/90	125.16	124.25	112.32	149.59
April/90	124.15	122.31	116.79	134.24
January/90	109.23	107.62	97.39	117.32
October/89	103.54	106.29	87.79*	114.27
July/89	111.41	119.68	97.24*	145.35
April/89	121.25	125.58	103.93*	149.20
January/89	118.50	126.37	98.81*	152.74

c) MANUFACTURED FEED PRICES ($CDN.) - April 1990

	Corn Belt	Great Lake States	North East	Cheapest Region	U.S. Average
Complete Feeds					
Hog Grower 16%	271.8	257.5	278.4	257.5	274.5
Dairy Ration 16-18%	257.5	238.0	232.2	210.7	241.3
Laying Feed	277.1	291.4	244.5	231.5	253.6
Broiler Grower	299.2	330.4	301.8	271.8	282.3
Turkey Grower	299.2	323.9	299.2	232.8	310.9
Feed Supplements					
Beef Supp. 32%	338.2	353.8	372.0	286.2	325.2
Dairy Supp. 32-38%	362.9	381.1	312.2	301.8	355.1
Hog Supp. 36-40%	379.8	381.1	400.6	378.5	385.0

Sources: Agricultural Prices, NASS, April 1990; Policy and Programs Division Survey
* Monthly average price. Others are mid-month prices.

Seed

Corn Seed

The Ontario price for many seed corn varieties in 1990 was between $70 and $95 per unit. Records from a sample of Ontario farms showed that corn seed cost $30 per acre in 1989. Assuming a seeding rate of 26,000 kernels per acre, this is equivalent to a per unit cost of $92.

The average price for corn seed in the U.S. in 1990 was approximately $82.50 per unit (about 80,000 kernels). In Minnesota, which had a similar seeding rate to Ontario, corn seed cost about approximately $27.50 per acre or $84.50 per unit in 1989. Indiana, which uses a lower average seeding rate of 24,500 kernels per acre, had a seed cost of $23.90 per acre or $78.02 per unit.

Soybean Seed

The average 1990 price for soybean seed in the U.S. was $13.54 per bag (25 kg). In 1989, the cost of seed in the northern states was higher than the national average by more than $1.50 per bag. In Ontario, the 1990 average price for treated seed was between $14 and $15 per bag but some private varieties were more expensive than this range. In Ontario, untreated seed costs about $0.75 per bag less than treated seed.

Many producers plant soybeans that they harvested the previous year rather than purchase pedigreed seed. In 1989, almost 70 per cent of the soybeans planted in the northern states was planted with purchased seed. In Ontario, it has been estimated that less than 50 per cent of the soybean seed planted is purchased seed. Home grown seed costs from $1.00 to $2.25 above the value of the soybeans, depending on whether or not the seed was treated and also whether the seed was bagged or handled in bulk.

The seeding rate varied considerably, often due to regional weather and related management practices. In 1989, the average seeding rate in the northern states was almost 28 kg per acre while the average rate in Ohio was 34 kg. In Ontario, the seeding rate varied from rate comparable to the U.S. Corn Belt in the Southwest to more than 1½ times that rate in central and eastern Ontario where soybeans are planted in narrow rows.

The total seed cost per acre in Ontario varied from under $10.00 per acre to $25.00 per acre.

Machinery

Comparisons of the list and average prices paid for new farm machinery were not conclusive. The wide variation in the Ontario prices made an average price for a particular type of machine almost meaningless. When an average was used, the Ontario price was higher for some types and sizes of machinery, and lower for others. The price variation and differences in models, as well as the differences in models and options between companies, made it impossible to use the data collected to make direct price comparisons between locations. Discussions with individuals knowledgable about machinery prices on both sides of the border supported the position that machinery is comparably priced.

Custom Work Rates

Table 7 shows the average custom work rates in a few states and regions in the U.S. and Ontario. For most operations, the price variation within the U.S. was greater than the price difference between U.S. and Ontario (Table 9). However, ploughing and combining rates were about 15 per cent higher in Ontario. For other operations, some Ontario prices were somewhat cheaper and while others were somewhat more expensive than the U.S. prices.

AVERAGE CUSTOM WORK RATES **Table 7**

			($CDN./acre)		Ontario		
Operation	**N. East**	**Indiana**	**Iowa**	**Michigan**	**Area #1**	**Area #2**	**Area #3**
Tillage							
Mouldboard Plow	14.16	12.15	11.92	14.12	16.05	15.22	14.78
Discing	10.62	7.81	7.55	10.18	7.97	8.68	8.07
Field Cultivate	8.56	N/A	6.96	7.30	7.41	8.13	6.93
Planting							
Corn	11.80	12.84	9.50	10.66	9.99	10.70	10.11
Small Grains	9.44	9.44	9.20	7.91	9.07	9.78	9.38
Soybeans	12.57	11.75	7.67	10.66	9.51	10.73	10.07
Spraying*							
Herbicide & Insecticide	6.49	N/A	4.25	4.60	6.10	6.16	5.56
Harvesting (Combining)							
Corn	29.50	25.54	26.20	24.40	30.52	31.56	31.38
Soybeans	27.14	24.65	25.02	24.08	28.90	31.93	29.94
Sm. Grains	23.60	22.30	22.54	21.00	26.68	24.48	25.27

* Without Chemicals (Farmer provides materials)
Source: Various State and Provincial Reports.

Area #1 - Southern Ontario Area #2 - Southwestern Ontario Area #3 - Western Ontario

VARIATION IN CUSTOM FARM RATES **Table 8**

Operation	Indiana ($CDN./acre)	Ontario ($CDN./acre)
Mouldboard Plowing	8.86 - 15.66	10.00 - 25.00
Discing	5.11 - 10.82	5.00 - 12.00
Planting corn	8.00 - 18.89	6.00 - 16.00
Planting soybeans	7.38 - 17.12	7.00 - 15.00
Combining corn	21.74 - 30.07	25.00 - 40.00
Combining small grains	17.76 - 26.14	20.00 - 32.00

Source: Custom Farm Rates, Policy Analysis Branch; Purdue Crop Guide

Land

In 1988, the average land values, including buildings, where higher in Ontario than in any of the U.S. states examined. The average price reported in Ohio was more than 31 per cent lower than the Ontario average.

AVERAGE 1988 LAND VALUES INCLUDING BUILDINGS **Table 9**

Location	Land Value ($CDN./acre)
Ontario	1,780
Illinois	1,370
Indiana	1,145
Iowa	1,095
Michigan	1,049
Minnesota	692
New York	1,176
North Carolina	1,306
Ohio	1,219
Wisconsin	775

Sources: Policy Analysis Branch; Agricultural Resources, Agricultural Land Values, USDA.

Table 10 illustrates that land prices varied considerably. In 1988, average land sale values were $2,300 per acre in Southern Ontario, $999 in Eastern Ontario, and only $368 in Northern Ontario. In Minnesota, large variations between regions also existed. Significant land price variations also existed within many other U.S. states and Ontario regions.

AVERAGE REGIONAL LAND VALUES IN 1988 **Table 10**

Ontario Region	Land Value ($CDN./Acre)	Minnesota Region	Land Value ($CDN./Acre)
Eastern	999	Southeast	980
Central	1,938	Southwest	1,120
Western	1,849	West Central	702
Southern	2,300	East Central	485
Northern	368	North West	506
		North East	232
		Twin Cities Area	1,141

Sources: Policy Analysis Branch; The Minnesota Rural Real Estate Market in 1988, University of Minnesota.

In 1988, the average Ontario cash rental rate of $40 per acre was below the average rate in each U.S. state examined except New York and North Carolina (Table 12). The average rates in three states (Iowa, Indiana, Illinois) were twice as high as the Ontario average.

AVERAGE RENTAL RATE FOR FARMS RENTED FOR CASH 1988 **Table 11**

Location	Rental Rate ($CDN./acre)
Ontario	40
Indiana	91
Illinois	102
Iowa	101
Michigan	48
Minnesota	64
New York	36
North Carolina	35
Ohio	76
Wisconsin	62

Source: Cash Rental Rates in Ontario, 1988, Policy Analysis Branch; Agricultural Resources, Agricultural Land Values, USDA.

Land rental rates vary considerably between and within areas. Within areas, rental rates are affected by the crops that can be produced, yield potentials, and the local supply and demand balances. For example, in Ontario, the average paid for corn land was $48 per acre while the average for land on which specialty crops were grown was $138. The $75 per acre average in southwestern Ontario reflects both the specialty crops grown and the high yield potential for other crops such as corn.

To be meaningful, adjustments should be made so that land producing similar crops and yield potentials are compared. The rental rates for corn land in some regions of the U.S. are comparable to Ontario regions with similar yields (Table 12). For example, rates in Oxford County and central Michigan, where corn yields are similar, were almost identical. However, while common rental rates for land used to grow processing tomatoes in Essex and Kent counties were $350 to $400 per acre, the average rate for comparable land in Ohio was about $200 per acre.

All averages should be interpreted with caution because the high variation within U.S. regions and within Ontario. For example, in southeastern Michigan, the average rental rate for corn land was $90 but ranged from $30 to $135.

CASH RENTAL RATES FOR CORN LAND - 1988 **Table 12**

Area	Avg. Rental Rate ($CDN./acre)	Avg. Yield in Bu/acre (1986 & 1987)
Kent County Ontario	103	132
Oxford County Ontario	58	118
Western Ontario	44	111
Eastern Ontario	32	91
South East Michigan[a]	90	127
Central Michigan[a]	56	114
Southeast Minnesota[b]	73	138
Central Minnesota[b]	45	108
South Central Minnesota[b]	94	139

[a] - Michigan yields were for the region and did not differentiate rented land
[b] - Minnesota rents were for the region and did not differentiate corn land from other land.

Source: Cash Rental Rates in Ontario, 1988 Policy Analysis Branch; Michigan Field Rental Rates, 1988-89, Michigan State University; Minnesota's Farm Cash Rental Market 1989, University of Minnesota.

Labour

Little information is available on either Canadian farm labour costs or full-time labour compensation levels in the U.S. However, the comparison of the 1988 rates on Ontario hog farms (Table 14) to 1988 rates on New York dairy farms (Table 13) suggests that Canadian rates are slightly higher. However, no firm conclusions should be drawn from this comparison because the difference is relatively minor, especially considering that the sample size was small and different sectors were studied.

LABOUR RATES ON NEW YORK DAIRY FARMS IN 1988 **Table 13**

	Cash Wages Paid ($CDN./yr.)	Total Compensation ($CDN./yr.)
Working Manager	18,631	30,135
Independent Employee	15,951	23,134
Labourer	12,870	20,295

Source: Wage and Benefits of Full-Time Non Family Employees on Larger than Average New York Dairy Farms, Cornell University, Oct. 1989.

LABOUR RATES ON ONTARIO HOG FARMS IN 1988 **Table 14**

	Cash Wages Paid ($CDN./yr.)	Total Compensation ($CDN./yr.)
Supervisor/Manager	25,615	33,471
Skilled	20,332	25,421
Semi-Skilled	18,765	21,695

Source: Human Resources Management on the Farm, Highlights, June 1990.

As comprehensive surveys of farm wages paid in Ontario are not available, the Farm Agricultural Resources Management Services (FARMS) rates for off-shore labour (Table 15) were used to examine labour costs. In 1989 and 1990, farmers often paid more than the minimum wage to attract workers. The minimum wage in 1990 was $5.00 per hour. However, the FARMS rate in 1990 for vegetable workers was $5.60 per hour.

Caution should be used when extrapolating the FARMS rates to wage rates across Ontario for many reasons including:

- many workers in the horticultural sector are paid on a piece rate;
- while offshore labour is used by many producers, local labour is still important in all parts of the province;
- Canadian growers pay for the airfare, housing, and some benefits of offshore workers.
- the cost per hour worked of these benefits varies considerably; and
- lead hands may be paid a higher wage to compensate for extra responsibility.

PREVAILING AGRICULTURAL WAGE RATES in ONTARIO 1990 **Table 15**

		($CDN.)
Apples		$5.60/hr
Tomatoes	- Mechanical Harvest	$5.85/hr
Tobacco	- Flue - Primers	$62.00 kiln/day*
		$6.20/hr
	- Planting	$6.95/hr
Tobacco	- Black	$8.00/hr
Nurseries		$6.45/hr
Other Fruit	- (Hand Harvest)	$5.25/hr
Vegetables	- Field and Greenhouse (Including Hand Harvest Tomatoes)	$5.60/hr
Canning/Processing		$5.55/hr

*Daily work unit includes emptying kiln.

Source: Employer Information Package, 1990 - Foreign Agricultural Resource Management Services (FARMS)

In April 1990, the average farm worker in the U.S. was paid over $6.00/hour for field work. In addition, 44 per cent of the U.S. farm workers received benefits with 22 per cent of all workers receiving housing as a benefit.

FARM WAGES IN THE U.S. in APRIL 1990 **Table 16**

Location	Field Worker ($CDN./hour)	Supervisor ($CDN./hour)
Northeast 1 includes New York	6.78	8.93
Great Lakes states Mich., Minn., Wisc.	6.35	9.13
Cornbelt 1 Illinois, Indiana, Ohio	5.49	11.47
Appalachian 1 includes N. Carolina	5.27	11.55

Source: Farm Labour, NASS, May 1990

Within states, substantial variation in wages paid to seasonal agricultural workers appears to exist. In Michigan, published wages ranged from $5.30 per hour for raspberries, where mostly student labour was used, to $11.80 per hour for blueberries were a non-student labour force was common. Most crops were budgeted from $7.00 to $9.50 per hour, including benefits. The Michigan wages were calculated with the consensus of several representative growers and published in Michigan State cost studies. In Ohio, labour costs varied considerably depending upon the proximity and type of competing industry in the area.

In some parts of Michigan, workers from Texas are quite important to the horticultural industries while in other parts, local labour is heavily relied upon. The source of the labour used can affect the labour costs.

Interest Rates

High real interest rates in Canada compared to the U.S. (Table 17) stem from Canada's restrictive monetary policy that has been used to attract foreign capital and reduce inflationary pressures from deficit spending. The effect is that real interest rates (adjusted for inflation) have risen sharply since 1988 to historically high levels. Real interest rates in Canada rose from 4 per cent in the first quarter of 1988 to over 7.5 per cent in the first quarter of 1990. Real interest rates in Canada were twice as high as similar rates in the U.S. in early 1990.

CANADIAN AND UNITED STATES PRIME LENDING RATES, CANADA AND THE UNITED STATES **Table 17**

Year	Canada (%)	United States (%)
1988	10.83	9.40
1989	13.26	10.75
1990[1]	14.75	10.00

[1]Prime lending rate for May 1, 1990
Source: Bank of Canada Review, March 1990

Federal and provincial/state governments have sought to ease the credit burdens on farmers by providing credit on concessionary terms. Canadian farmers receive credit through the Farm Credit Corporation (FCC), chartered banks, various provincial credit agencies, the Prairie Grain Advance Payments Act, and the Advance Payments for Crops Act (Table 18).

The FCC is a federal agency whose role is making loans to assist Canadian farmers in developing viable farm units. The FCC accounted for about 20 per cent of farm credit outstanding in 1988. It reduced its extension of new long-term credit, from a high of $854.9 million in 1983 to only $136.2 million in 1988. Its total outstanding long-term credit over this period also fell from $4.6 billion to $4.1 billion. In Canada, various provincial agencies have been the principal lenders charged with providing subsidized loans to the farm sector.

The major focus of the Ontario government's financial initiatives throughout the 1980s was to reduce the cost of credit through interest rate rebates. Programs such as the Ontario Family Farm Interest Rate Reduction Program (OFFIRR) and the Beginning Farmer Assistance Program (BFAP) targeted interest rate assistance to viable family farm enterprises and beginning farmers respectively[2].

In the U.S., the Farmer's Home Administration (FmHA) and the Commodity Credit Corporation (CCC) are the main sources of government funding of credit to the farm sector, providing producers with access to funds at reduced rates. The CCC provides loan funds to farmers on commodities in storage, but loans are made primarily to implement federal price and income support policies. CCC loans provide an advantage to U.S. farmers. When the study was done (1990), CCC rates were expected to be about 2 per cent below prime in 1990, while similar Canadian programs such as the Prairie Grain Advance Payments Act and the Advance Payment For Crops Act will provide financing at 1 per cent and 0.25 per cent respectively below prime.

[2] Farmstart replaced BFAP in July 1988. It did not provide interest rebates but rather direct cash assistance to eligible beginning farmers so as not to encourage over - reliance on debt.

The FmHA is a USDA agency that provides subsidized loans to individuals, co-operatives, and corporations engaged in farming who are unable to obtain credit from commercial lenders.

In addition, the U.S. Farm Credit System, a farmer-owned lending co-operative, supplies short, intermediate, and long-term credit. In 1990, it controlled 25.9 per cent of the U.S. farm credit market. The System's rates are slightly below market rates for two reasons. First, it is designed to provide credit to agriculture at cost. Second, it carries an implicit government guarantee which allows for it to borrow from the U.S. money market at reduced rates.

Table 19 shows the 1988 and 1989 average agricultural interest rates in Ontario and in selected states for real estate (mortgage) and non-real estate (non-mortgage) loans. In 1988, only Iowa, at 9.9%, had a lower real estate rate than Ontario. Ontario and Minnesota both had rates of 10.2 per cent. The other four states had higher rates than Ontario. The 1988 non-real estate rates in North Carolina (11.2 per cent) and Ohio (11.7 per cent) were lower than Ontario's (11.8 per cent). The average rates in Iowa, Michigan, Minnesota and New York were higher than Ontario's.

In 1989, interest rates in Ontario were higher for both real estate and non-real estate (Table 19). The Ontario rate for real estate was 10.5 per cent while the rates in the states studied ranged from a low of 8.7 per cent in New York to a high of 9.7 per cent in Michigan. For non-real estate, the Ontario average was 13.6 per cent while the states' rates varied from 10.8 per cent in New York to 11.9 per cent in Minnesota and Iowa.

AGRICULTURAL INTEREST RATES, ONTARIO **Table 18**

Lending Institution	Real Estate	Non-Real Estate
1988		
Average Ontario Rate	10.2%	11.8%
Farm Credit Corporation	10.9%	N/A
Chartered Banks	12.5%	11.8%
Private	8.4%	N/A
Supply Company	N/A	13.8%
1989		
Average Ontario Rate	10.5%	13.6%
Farm Credit Corporation	10.7%	N/A
Chartered Banks	13.8%	13.8%
Private	8.7%	N/A
Supply Company	N/A	15.8%

Source: Statistics Canada, Farm Income and Prices Section (Unpublished data - 1988 and 1989).
N/A - not applicable

AGRICULTURAL INTEREST RATES IN SELECTED STATES AND ONTARIO **Table 19**

1988	Real Estate (%)	Non-Real Estate (%)
Iowa	9.9	13.2
Michigan	11.0	11.9
Minnesota	10.2	13.3
New York	10.5	11.9
North Carolina	10.6	11.2
Ohio	10.4	11.7
Ontario	10.2	11.8
1989		
Iowa	9.3	11.9
Michigan	9.7	11.1
Minnesota	9.5	11.9
New York	8.7	10.8
North Carolina	9.5	11.1
Ohio	9.6	11.4
Ontario	10.5	13.6

Source: Economic Indicators of Farm Sector - State Financial Summary, 1988

Taxes

The sales, fuel, and property tax policies applied to Ontario agriculture were compared to those in Iowa, Michigan, Minnesota, New York, North Carolina and Ohio. All tax rates are for 1989 unless otherwise stated.

Sales Tax

In Ontario and the examined states, farmers generally get a sales tax exemption on purchases of and repairs on most items needed to operate a farm business. However, farmers in Minnesota and North Carolina do pay a reduced sales tax on farm equipment and machinery. Specifically, in Minnesota, sales taxes on farmers' purchases or rentals of farm machinery are reduced by 2 per cent and in North Carolina, farmers pay a 1 per cent sales tax with a maximum of $80.00 for each piece of equipment or machinery purchased.

Fuel Tax

In Ontario, farmers pay the provincial tax on gasoline but can apply for a full refund of the tax on gas used for farm operations and for unlicensed vehicles. For diesel fuel, farmers may either pay the tax and apply for a refund or purchase coloured fuel which is tax exempt.

Ontario farmers do not receive a full refund of federal excise and sales taxes paid for fuel used for agricultural purposes. Under the Excise Gasoline Tax Refund Program, farmers are eligible for a refund of 1.5 cents/litre on gasoline or diesel fuel. Under the Fuel Tax Rebate Program, farmers are eligible for a rebate of up to 3.5 cents per litre on gasoline and diesel fuel.

Except in North Carolina, farmers pay the federal and state taxes on fuel used for agricultural purposes and can apply for a full refund, except for bulk diesel fuel which can be purchased tax-exempt. In North Carolina, farmers pay state taxes of 0.4 cents/ litre on fuel.

Property Taxes

In Ontario, effective for the 1990 and 1991 tax years, owners of farm property in agricultural production receive a rebate of 75 per cent of property taxes.

In all the states examined, agricultural land is taxed on some kind of productivity value of the land, which is generally much lower than market value assessment. See Table 20 for details of this assessment.

Table 20. TAX INFORMATION COMPARISON INPUT COST STUDY ($CDN.)

Province and States	Sales Tax	Fuel Tax	Property Tax
Ontario	Provincial rate - 8 per cent Farmers purchase and repairs tax exempt items needed to operate a farming business (e.g. milking machines, tractors combines) Federal Excise Tax rate - 13.5 per cent Most goods purchased by farmers and fishermen are exempt from federal excise tax (e.g., livestock, fertilizers, pesticides, feed)	Provincial Gasoline 11.3¢/litre-unleaded 14.3¢/litre-leaded 10.9¢/litre-diesel Agricultural producers pay tax and apply for a full refund for tax on gas used in a non-taxable manner (unlicensed vehicles for farm use). Diesel a) Farmer may pay tax and apply for a refund as with gasoline; or b) Use coloured fuel for agricultural purposes. Purchased tax exempt at point of sale. Federal Excise Tax - Rates Jan. 1/90 8.5¢/litre-unleaded 9.5¢/litre-leaded 4.0¢/litre-diesel Farmers pay tax and apply for a refund of 1.5¢/litre excise tax paid on gasoline. Program ended Dec. 31/89. Sales Tax Rate July 1-Sept. 30/90 3.74¢/litre-regular 3.85¢/litre-premium 2.88¢/litre-diesel Effective Jan. 1/90 rebate to farmers will be 3.5¢/litre of gasoline and diesel. Program replaced by GST - January/91.	Effective for 1990 and 1991 tax years. Owners of farm property in agricultural production will receive a rebate of 75 per cent of property taxes. Farm property must be used as part of a farming operation and have gross production value of $7,000 in 1990.

*All data is for 1990 unless otherwise stated.

(Continued on following page)

Table 20. TAX INFORMATION COMPARISON INPUT COST STUDY (continued)

Province and States	Sales Tax	Fuel Tax	Property Tax
Iowa	State rate - 4 per cent Local option - 1 per cent Total rate - 5 per cent Agriculture is exempt for all products purchased for farm use.	Gasoline 6.2¢/litre Diesel 7¢/litre Farmers pay the tax and apply for a refund of tax paid on gas used for agricultural purposes (all non-highway use). Federal Tax Gas 2.8¢/litre Diesel 4.7¢/litre Agriculture is eligible for a refund of taxes paid. Producers either apply for a refund or they get a tax credit on federal taxes payable.	Tax on Agricultural land is based on the assessed value of the productivity of the land, (Productivity value is approximately 50 to 60 per cent of market value) Average property tax paid is (U.S.) $19.78 per (U.S.) $100 of assessed value. Productivity value-based on five-year average of net income per acre capitalized at 7 per cent. In 1988, the average tax levied on farm real estate was $12.60/acre.
Michigan	State rate - 4 per cent Agriculture is tax exempt for all products purchased for farm use (e.g., machinery, seed, fertilizer, livestock).	Gasoline & Diesel - 4.7¢/litre Agriculture eligible for a refund of tax paid on gas used for agricultural machinery. Bulk Purchase Diesel fuel is purchased tax exempt. Federal Tax Gas 2.8¢/litre Diesel 4.7¢/litre	Farmers enter into a Farmland Development Rights Agreement, "Farmland and Open Space Preservation Act" for a minimum of 10 years and a maximum of 90 years. Land must remain in agricultural use. Land cannot be subdivided into smaller units and sold separately to new owners. Farm eligibility governed by size and income.

All data is for 1990 unless otherwise stated.

(Continued on following page)

Table 20. TAX INFORMATION COMPARISON INPUT COST STUDY (continued)

Province and States	Sales Tax	Fuel Tax	Property Tax
Michigan (cont'd)		Agriculture is eligible for a refund of taxes paid. Producers either apply for a refund or they get a tax credit on federal tax payable.	Eligibility A farm of 40 or more acres with gross annual income of (U.S.) $200 per acre; A specialty farm of at least 15 acres and a gross annual income of $2,000. Agricultural producers get a tax credit for property tax that exceeds 7 per cent of household income (e.g., Household Income $20,000 7% = (.07 x 20,000) = 1,400) If property tax is $2,000, producers refund is $600 (2,000 - 1,400). The average 1988 tax levied on farm real estate was $38.06/acre.
Minnesota	State rate - 6 per cent Agriculture gets tax exemptions for some items purchased for agricultural production (e.g., farm animals, seeds, chemicals, fuels). The purchase or rental of farm machinery and equipment are subject to sales tax at the reduced rate of 2 per cent (e.g., tractors, combines, milling machines).	Gasoline & Diesel - 6.2¢/litre Agriculture eligible for a refund of tax on gas used for non-licensed vehicles. Bulk Purchase Gas and diesel may be purchased tax exempt for bulk storage. Applies to non-licensed vehicles. Federal Tax Gas 2.8¢/litre Diesel 4.7¢/litre Agriculture is eligible for a refund of taxes paid. Producers either apply for a refund or they get a tax-credit on federal taxes payable.	Farm residences and one acre of land taxed the same as all other residences: - 1 per cent on first (U.S.) $68,000 of assessed value - 2 per cent for between (U.S.) $68,000 and (U.S.) $110,000 of assessed value - 3 per cent on anything over (U.S.) $110,000. Homestead Properties - 0.4 per cent on Agricultural land over the value of the residence up to (U.S.) $100,000. - 1.3 per cent on anything over (U.S.) $110,000 to 320 acres in size. - 1.7 per cent on anything over 320 acres in size. Non-Homestead Properties 3 per cent on assessed value of house. 1.7 per cent on all land. The 1988 average tax levied on farm real estate was $7.21/acre.

All data is for 1990 unless otherwise stated.

(Continued on following page)

Table 20. TAX INFORMATION COMPARISON INPUT COST STUDY (continued)

Province and States	Sales Tax	Fuel Tax	Property Tax
New York	State rate - 4 per cent Local counties can add to this rate. Total rate varies from 4 per cent to 8 1/4 per cent depending on the county. Agriculture is exempt for most products purchased for farm use.	Gasoline 2.5¢/litre Diesel 3.1¢/litre Agricultural eligible for a refund of tax on gas used for agricultural purposes (unlicensed vehicles). Diesel fuel may be purchased tax exempt in bulk if delivered to the production of tangible personal property for sale by farming. Federal Tax Gas 2.8¢/litre Diesel 4.7¢/litre Agriculture is eligible for a refund of taxes paid. Producers either apply for a refund or they get a tax-credit on federal taxes payable.	Preferential Assessment Program for Agricultural Land. Farmer pays based on agricultural assessment which is a percentage of the base assessment rate depending on land productivity. In 1988, the average tax levied on farm real estate was $21.08/acre. Base value is a five-year average of capitalized Value of Production per acre. To qualify for a preferred agricultural assessment: - must be 10 acres or more - (U.S.) $10,000 gross income a year for two-years - land in agricultural use for a minimum of two-years - land must continue in agricultural production for a period of 8 years if outside an agricultural district or 5 years if inside an agricultural district.
North Carolina	State rate - 3 per cent Local rate - 2 per cent Total rate - 5 per cent Agriculture is exempt for most products purchased for farm use. Agriculture pays 1 per cent sales tax to a maximum of $80 for each piece of equipment or machinery purchased.	Gasoline & Diesel 6.8¢/litre (reviewed semi-annually) Agricultural exemption for non-highway use. All tax refunded except 0.4 ¢/litre. Diesel can be purchased tax exempt in bulk for storage and use on farm. Federal Tax Gas 2.8¢/litre Diesel 4.7¢/litre	Agricultural land is taxed on the basis of present - use value. The value of the land based solely on its ability to produce income capitalized at 10 per cent. To be eligible for agricultural assessment, must have a minimum of 10 acres which are used for agricultural purposes with annual gross income of (U.S.) $1,000 a year for three years. e.g. Best Agricultural Land - $1,000/acre use value - Tax rate 65-75¢/(U.S.) $100 of assessed value.

All data is for 1990 unless otherwise stated.

(Continued on following page)

Table 20. TAX INFORMATION COMPARISON
INPUT COST STUDY (continued)

Province and States	Sales Tax	Fuel Tax	Property Tax
North Carolina (cont'd)		Agriculture is eligible for a refund of taxes paid. Producers either apply for a refund or they get a tax-credit on federal taxes payable.	- Property tax would be between (U.S.) $6.50 and (U.S.) $7.50 per acre per year - A small percentage of land would be in the category Typical Agricultural Land - (U.S.) $500/acre use value - Tax rate 65-75 cents per (U.S.) $100 of assessed value - Property tax would be between (U.S.) $3.25 and 3.75 per acre per year - Majority of agricultural land would be in this class. Low Agricultural Land (U.S.) $50 - $100/acre use value In 1988, the average tax levied on farm real estate was $6.91/acre.
Ohio	State rate - 5 per cent Counties can apply additional taxes on top of base rate. Agricultural exemption for most products purchased for agricultural use.	Gasoline & Diesel - 5.6¢/litre Agriculture pays the tax and applies for a refund of tax paid on fuel for agricultural purposes. Bulk purchases of fuel stored and used on farm can be purchased tax exempt.	Agricultural land is taxed on a percentage of the Current Agricultural Use Value. Current use value is approximately one-third of market value. The annual taxable valuation is 35 per cent of the agricultural use value. In 1988, the average tax levied on farm real estate was $12.24/acre.

All data is for 1990 unless otherwise stated.

ANALYSIS

Price Variations

There was no one price for any product. Substantial price variations existed within Ontario, between U.S. states and regions, and within each U.S. state. Various reasons contributed to these price differences, including transportation costs, the level of regional competitiveness, the volume used by the purchaser, and the alternative products available within each region.

Cost Differences

Many factors were identified that have an impact on the cost structure of a farm business. Price is not the only important factor when considering relative competitiveness. Other factors such as the form and level of inputs used and the purchasing option used can have a greater effect on a farm's cost structure than the relative regional price of a particular form of an input. Many differences exist in management practices and, in many cases, one input can be substituted for another. All these factors result in wide variations in cost between farms. This suggests that significant opportunities exist for farms to reduce their costs through alternate purchasing practices, the reduced use of some inputs and the substitution of some inputs or forms of inputs for others.

Fertilizer

The information gathered suggests that fertilizer prices were not higher in Ontario in 1990. In this study, the prices for several products were lower in southwestern Ontario than in comparable U.S. regions. However, total provincial expenditures per actual nutrient purchased were significantly higher. Possible reasons include the types of fertilizer used and the way that they are purchased. For example, lower rates of the cheapest form of nitrogen (anhydrous ammonia) are used in Ontario, partially due to safety concerns. Also contributing significantly to the price differences are other factors such as volume purchases and different type of crops produced.

Pesticides

All the evidence gathered suggests that pesticide prices were generally higher in Ontario than in the U.S. However, this price difference was not consistent for all products. In addition, certain fungicides, insecticide, and some other chemicals appeared to be much higher priced in Ontario. This analysis is consistent with the findings of several other groups including the federal Task Force on Competitiveness. Distributors treat the Ontario pesticide market as being separate from the U.S. because products cannot be purchased in the U. S. and brought freely into Ontario. Thus, suppliers are able to price separately in the markets. This is most evident for products with a limited number of substitutes. Some of the extreme price differences would probably be moderated without these import barriers.

The range of products available to Ontario growers is not equal to that in some states because of the separate registration process. The time and expense of getting a product approved may also reduce the number of products available for a particular use because companies may choose not to apply for Ontario registration. The reduced choice can contribute to lower competition for available pesticides and thus, higher prices.

Fuel

Diesel fuel was more expensive in Ontario than in any of the regions examined in the U.S. The proportion of the federal tax that is not refunded can explain the difference between the fuel prices in Ontario and the northeast U.S.. The additional difference between Ontario diesel fuel prices and other regions of the U.S. could be due to higher refining or distribution costs or to a greater markup in Ontario. The difference in fuel costs to farmers in the U.S. and Ontario would have been fairly small if federal rebates resulted in zero taxes being paid by farmers on fuel.

Feed

The variation found in feed prices between different regions within the U.S. was greater than the difference between Ontario prices and those in neighbouring states. The competitive position of Ontario feed manufacturers is not clear. Manufactured feed moves across the Canada/U.S. border in both directions. At times, the price of complete feeds is higher in Canada due to the higher price of corn. The impact of the corn countervailing duty is variable within a crop year and between years depending upon the local supply and demand conditions for corn. The price of feed supplements appears to be competitive with the rates charged in neighbouring states.

Some livestock producers have considerable choice in the type of feed that can be used. The feeding of by-products and the substitution of cheaper protein sources in rations make cost comparisons difficult. Many producers on both sides of the border are able to lower their feed costs through the use of home-grown feeds and by blending and conditioning the feed themselves. It is not known whether Ontario producers utilize these strategies to a greater or lesser extent than U.S. farmers.

Seed

The price of corn seed was found to be higher in Ontario than in the U.S. states examined. Corn seed is marketed by variety. Each variety is priced differently in each market, based on its popularity and the market share the company is attempting to capture with that variety. Farm grown seed is rarely used. Canada is a net exporter of corn seed to the U.S. suggesting that the wholesale cost of corn seed is competitive to U. S. corn. Any significant price differences between Ontario and a U.S. region is likely the result of the distributer's ability to effectively promote its varieties in the province and thus, maintain Ontario as a separate market.

In contrast to corn seed prices, soybean seed prices were not significantly higher in Ontario. The differences that did exist were less than those for corn. The ability of farmers to save their own seed provides significant competition to varieties on the market. The differences in seed

cost due to various seeding rates and to the use of home-grown seed versus new seed are far more significant than any difference found between Ontario and U.S. prices.

The legislation governing the seed industry in Canada recently changed with the passage of Plant Breeders Rights. The impact of this legislation on the cost and availability of seed is uncertain. The act specifies that seed may be sold as either certified or common. In order to maintain the integrity of the varieties, common seed cannot be advertised as originating from a particular variety. The rules are different in the U.S. and it is unknown what impact the differences may have on the competitiveness of the relative industries.

Machinery

There was no evidence to suggest that farm machinery prices are significantly different between the regions examined. However, the price variation makes comparisons very difficult. Discussions with purchasers on both sides of the border support the position that farm machinery is usually competitively priced in Ontario. There are no barriers to or tariffs on imports of agricultural machinery into the province. Currency fluctuations can have a temporary impact until a new price list is established. Regional differences on promotional programs do exist.

Custom Work Rates

The custom work rates charged in Ontario as found in this study, were comparable to those charged in various states. However, it should be noted that there is significant variation apparent within every region examined.

Land

The study's results showed that land prices were higher in many parts of Ontario than in U.S. regions with similar crop and yield potential. The high level of urbanization is a factor. Also, in some parts of the province, the potential to grow specialty crops places upward pressure on land prices. Considerable variation in land prices exist within every region examined. High land prices contribute to a higher cost structure over time. At the same time, one of the factors contributing to the price of land is the potential profitability from the cropping options available.

With the exception of rent for some specialty crop production, land rental rates were comparable to U.S. rates. In some parts of the U.S., a greater proportion of the land is available for rent under crop share agreements than in Ontario but no data was available on the rates charged under these agreements in Ontario.

Labour

The difference between the wage rates found for seasonal agricultural workers in Ontario and the U.S. was significantly less than the variation in rates within each jurisdiction. The off-shore workers that provide significant manpower on a seasonal basis in Ontario are comparable in cost to the migrant workers who relocate into the northern states in the summer. The total hourly cost, however, can vary significantly between farms depending on the number of hours over

which fixed costs such as airfare and housing can be spread. Due to variation within regions, it is possible that producers of one commodity within a U.S. region have a comparative advantage over producers of the same commodity in Ontario. More research is necessary to determine which commodities are at a disadvantage due to labour costs and what the level of the disadvantage is. It is also important to note, however, that differences in labour productivity can have a dramatic impact on per unit labour costs.

Conclusions about the comparative cost of full-time agricultural workers cannot be drawn from the information available.

Interest Rates

The data found in the study indicates that in 1988 Ontario's farmers were not at any relative disadvantage for either real estate (mortgage) or non-real estate interest rates.

In 1989, both real estate and non-real estate interest rates were higher in Ontario than in the six states studied. Consequently, Ontario's farmers were at a relative disadvantage to their U.S. counterparts.

Taxes

As a general rule, Ontario and U.S. agriculture receive a sales tax exemption on the purchase and repair of most items needed to operate a farm business. However, two exceptions exist. First, in Minnesota, sales taxes on farmers' purchases or rentals of farm machinery are reduced by only 2 per cent from the normal rate of 6 per cent. Second, in North Carolina, farmers pay a 1 per cent sales tax, with a maximum of $80.00, for each piece of equipment or machinery purchased.

With fuel tax, U.S. farmers can claim a refund for all tax paid on fuel used for agricultural purposes. Ontario farmers do not receive a full refund of federal excise and sales taxes on gas used for agricultural purposes. In 1990, Ontario farmers paid approximately 12.24 cents/litre federal tax on gasoline and got a refund of 5 cents/litre. For diesel fuel, Ontario farmers paid approximately 6.88 cents/litre and were refunded 3.5 cents/litre. (The refund of federal excise taxes ended on January 1, 1991.)

Ontario farmers were better off with respect to property taxes than the farmers in the states examined. Ontario farmers received a rebate of 75 per cent of property taxes paid in 1990. In all states examined, agricultural land is taxed on its agricultural productivity value. Although this value is generally lower than the market value assessment, farmers pay the full amount of this lower-valued property tax.